Linking Preventable Conditions and Pay for Performance

Presentation to the HSCRC Quality Evaluation Work Group

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Agenda

- Potentially Preventable Complications
  - MD Data Analysis and Results
- Potentially Preventable Readmissions
  - MD Data Analysis and Results

IDENTIFYING POTENTIALLY PREVENTABLE COMPLICATIONS (PPCs)

Potentially Preventable Complications (PPCs)

Harmful events (accidental laceration during a procedure) or negative outcomes (hospital acquired pneumonia) that may result from the process of care and treatment rather than from a natural progression of underlying disease

8 Groups of 64 PPCs

Extreme Complications

- Extreme CNS Complications
- Acute Pulmonary Edema & Respiratory Failure w Ventilation
- Shock
- Ventricular Fibrillation, Cardiac Arrest
- Renal Failure with Dialysis
- Post-Operative Respiratory Failure with Tracheostomy

Cardiovascular-Respiratory Complications

- Stroke & Intracranial Hemorrhage *
- Pneumonia, Lung Infection *
- Aspiration Pneumonia *
- Pulmonary Embolism *
- Congestive Heart Failure *
- Acute Myocardial Infarct *
- Peripheral Vascular Complications Except Venous Thrombosis *
- Venous Thrombosis *
- Acute Pulmonary Edema and Respiratory Failure without Ventilation
- Other Pulmonary Complications
- Cardiac Arrythmias & Conduction Disturbances
- Other Cardiac Complications

* Selected 35 “Major” PPCs

Gastrointestinal Complications

- Major GI Complications w Transfusion or Significant Bleeding *
- Major Liver Complications *
- Major Gastrointestinal Complications without Transfusion or Significant Bleeding
- Other Gastrointestinal Complications without Transfusion or Significant Bleeding

Perioperative Complications

- Post-Op Wound Infection & Deep Wound Disruption w Procedure *
- Reopening of Surgical Site *
- Post-Op Hemorrhage & Hematoma w Hemorrhage Control Proc or I&D Proc *
- Accidental Puncture/Laceration During Invasive Proc *
- Post-Op Foreign Body *
- Post-Operative Hemorrhage & Hematoma without Hemorrhage Control Procedure or I&D Procedure
- Post-Operative Infection & Deep Wound Disruption Without Procedure
- Post-Operative Substance Reaction & Non-O.R. Procedure for Foreign Body

Infectious Complications

- Clostridium Difficile Colitis *
- Urinary Track Infection *
- Septicemia & Severe Infection **
- Cellulitis
- Moderate Infectious

8 Groups of 64 PPCs (continued)

Malfunctions, Reactions Etc.

- Iatrogenic Pneumothrax *
- Mechanical Complication of Device, Implant & Graft *
- Inflammation, & Other Complications of Devices, Implants or Grafts Except Vascular Infection *
- Infections due to Central Venous Catheters*
- Infection, Inflammation and Clotting complications of Peripheral Vascular Catheters and Infusions
- Poisonings Except from Anesthesia
- Poisonings due to Anesthesia
- Transfusion Incompatibility Reaction
- Gastrointestinal Ostomy Complications

Obstetrical Complications

- Obstetrical Hemorrhage w Transfusion *
- Obstetrical Laceration & Other Trauma without Instrumentation *
- Obstetrical Laceration & Other Trauma with Instrumentation *
- Major Puerperal Infection and Other Major Obstetrical Complications *
- Obstetrical Hemorrhage without Transfusion
- Medical & Anesthesia Obstetric Complications

Obstetrical Complications (continued)

- Other Complications of Obstetrical Surgical & Perineal Wounds
- Delivery with Placental Complications

Other Medical and Surgical Complications

- Post-Hemorrhagic & Other Acute Anemia w Transfusion *
- Decubitus Ulcer *
- Encephalopathy *
- Renal Failure without Dialysis
- GU Complications Except UTI
- Diabetic Ketoacidosis & Coma
- In-Hospital Trauma and Fractures
- Acute Mental Health Changes
- Accidental Cut or Hemorrhage During Other Medical Care
- Other Complications of Medical Care
- Other Surgical Complication – Moderate
- Other In-Hospital Adverse Events

* Selected 35 “Major” PPCs

Maryland Data PPC Analysis

- 9 months of data – July 2007 – March 2008
- 50 hospitals
  - 2 rehab hospitals excluded
  - 6 hospitals excluded do to poor data reporting of POA indicator
- 42 hospitals used in PPC analysis data set with 500,771 discharges
- 91,284 (18%) excluded due to PPC global exclusion logic
- Remaining discharges at risk for one or more PPCs
  - 409,487 discharges
  - 0.96% died
  - 1.04 Case Mix Index
  - $10,423 average charge

Maryland POA Data Quality Analysis

- July 2007 – March 2008
  - 6 Hospitals with poor data reporting of POA indicator
- % Not POA for secondary diagnosis on the Pre-Existing List – This criterion identifies hospitals with a high not POA rate for pre-existing secondary diagnosis codes
  - 1 hospital over 7.5% excluded
- % Uncertain POA – This criterion identifies hospitals with a high uncertain present on admission rate for secondary diagnosis codes (excluding exempt and pre-existing codes)
  - 1 hospital over 10% excluded
- % Exempt POA – This criterion identifies hospitals with a high exempt present on admission rate for secondary diagnosis codes
  - 3 hospitals over 40% excluded
- High % POA – This criterion identifies hospitals with an extremely high percent present on admission rate for secondary diagnosis codes (excluding exempt, pre-existing, and OB 7600x-7799x codes).
  - 1 hospital over 97% excluded

Maryland POA Data Quality Analysis (cont)

- Low % POA – This criterion identifies hospitals with a low percent present on admission rate for secondary diagnosis codes (excluding exempt, pre-existing, and OB 7600x-7799x codes).
- % POA for secondary diagnosis on the List 1 for elective surgical cases – This criterion identifies hospitals with a high present on admission percentage rate for these secondary diagnosis codes on elective surgical DRG cases.
- For PPC Evaluation
  - Diagnosis with POA indicator coded as “exempt” that are not on the exempt list were reclassified as “Y”es POA if on the pre-existing list, otherwise, assumed “N”ot POA
  - Exempt POA diagnosis with POA indicator other than “Exempt” were reclassified as “Exempt” POA
  - Diagnosis with POA indicator coded as “U” were reclassified as “Y”es POA if on the pre-existing list, “Exempt” POA if on the exempt list, otherwise, assumed “N”ot POA

Impact of Major PPC Categories on Average Charges for GI Surgery

		Major GI Sugery			Other GI Sugery		
		Major PPC	Non-Major PPC	No PPC	Major PPC	Non-Major PPC	No PPC
SOI Level 1	No.	96	58	903	68	51	2,738
	Avg. Chrg	$25,911	$19,724	$14,965	$19,214	$13,643	$7,990
SOI Level 2	No.	244	136	1,234	154	99	2,859
	Avg. Chrg	$34,613	$24,875	$17,838	$27,024	$19,551	$10,173
SOI Level 3	No.	434	140	686	137	64	625
	Avg. Chrg	$55,760	$35,046	$25,797	$41,602	$26,750	$16,302
SOI Level 4	No.	115	12	103	27	5	54
	Avg. Chrg	$107,780	$167,656	$49,694	$97,709	$45,121	$26,727

Maryland data July 2007-Mar 2008

Impact of PPC Categories

Total At Risk for One or More PPCs	409,487		0.96	$10,423	1.04	$10,022
	Discharges	PPC Rate	% Died	Avg Chrg	CMI	CMI Adjusted Avg Chrg
Zero PPCs	389,948	0.00	0.55	$9,729	0.97	$10,052
One or More PPCs without Major PPCs	12,725	3.11	1.71	$18,852	1.68	$11,239
One Selected "Major" PPCs	15,175	3.71	5.48	$23,841	1.95	$12,243
Two Selected "Major" PPCs	2,692	0.66	16.05	$45,575	3.22	$14,172
Three or More Selected "Major" PPCs	1,672	0.41	32.83	$83,348	4.92	$16,943
One or More Selected 'Major" PPCs	19,539	4.77	9.17	$31,928	2.38	$13,435

Maryland data July 2007-Mar 2008

Maryland 2007-2008 Data PPC Rate

For Discharge in the Year Beginning July 1, 2007 and Ending March 31, 2008

PPC	Descripption	Discharges			
		At Risk for PPC	PPC Total Case	MD PPC Rate/100	CA PPC Rate/100
01	Stroke & Intracranial Hemorrhage	374,449	518	0.14	0.14
02	Extreme CNS Complications	345,445	189	0.05	0.04
03	Acute Pulmonary Edema and Respiratory Failure without Ventilation	356,993	2,861	0.80	0.35
04	Acute Pulmonary Edema and Respiratory Failure with Ventilation	356,982	1,160	0.32	0.33
05	Pneumonia & Other Lung Infections	298,208	2,112	0.71	0.56
06	Aspiration Pneumonia	339,781	835	0.25	0.24
07	Pulmonary Embolism	377,242	411	0.11	0.07
08	Other Pulmonary Complications	229,627	1,114	0.49	0.22
09	Shock	370,055	1,110	0.30	0.21
10	Congestive Heart Failure	325,222	1,494	0.46	0.39
11	Acute Myocardial Infarction	375,239	1,192	0.32	0.25
12	Cardiac Arrythmias & Conduction Disturbances	1,943	577	29.70	21.51
13	Other Cardiac Complications	342,498	453	0.13	0.07
14	Ventricular Fibrillation/Cardiac Arrest	382,675	953	0.25	0.30
15	Peripheral Vascular Complications Except Venous Thrombosis	380,906	250	0.07	0.04
16	Venous Thrombosis	378,387	982	0.26	0.18
17	Major Gastrointestinal Complications without Transfusion or Significant Bleeding	364,443	544	0.15	0.10
18	Major Gastrointestinal Complications with Transfusion or Significant Bleeding	361,980	195	0.05	0.04
19	Major Liver Complications	376,521	181	0.05	0.05
20	Other Gastrointestinal Complications without Transfusion or Significant Bleeding	364,404	222	0.06	0.04
21	Clostridium Difficile Colitis	382,675	793	0.21	0.13
22	Urinary Tract Infection	359,158	4,921	1.37	0.76
23	GU Complications Except UTI	374,877	282	0.08	0.04
24	Renal Failure without Dialysis	340,803	3,490	1.02	0.45
25	Renal Failure with Dialysis	347,416	123	0.04	0.05
26	Diabetic Ketoacidosis & Coma	380,037	54	0.01	0.00
27	Post-Hemorrhagic & Other Acute Anemia with Transfusion	298,174	679	0.23	0.15
28	In-Hospital Trauma and Fractures	382,675	227	0.06	0.03
29	Poisonings Except from Anesthesia	374,277	169	0.05	0.01
30	Poisonings due to Anesthesia	382,675	2	0.00	0.00
31	Decubitus Ulcer	383,449	634	0.17	0.09
32	Transfusion Incompatibility Reaction	382,675	0	0.00	0.00

Maryland July 07 – Mar 08

PPC 1-32

Maryland 2007-2008 Data PPC Rate

For Discharge in the Year Beginning July 1, 2007 and Ending March 31, 2008

PPC	Descripption	Discharges			
		At Risk for PPC	PPC Total Case	MD PPC Rate/100	CA PPC Rate/100
33	Cellulitis	329,838	782	0.24	0.15
34	Moderate Infectious	305,062	380	0.12	0.09
35	Septicemia & Severe Infections	366,511	2,415	0.66	0.44
36	Acute Mental Health Changes	294,325	532	0.18	0.13
37	Post-Operative Infection & Deep Wound Disruption Without Procedure	107,790	557	0.52	0.36
38	Post-Operative Wound Infection & Deep Wound Disruption with Procedure	107,777	31	0.03	0.02
39	Reopening Surgical Site	103,707	106	0.10	0.10
40	Post-Operative Hemorrhage & Hematoma without Hemorrhage Control Procedure or I&D Procedur	148,036	2,170	1.47	0.93
41	Post-Operative Hemorrhage & Hematoma with Hemorrhage Control Procedure or I&D Procedure	109,262	148	0.14	0.11
42	Accidental Puncture/Laceration During Invasive Procedure	135,413	1,162	0.86	0.62
43	Accidental Cut or Hemorrhage During Other Medical Care	382,675	74	0.02	0.00
44	Other Surgical Complication - Mod	109,395	232	0.21	0.15
45	Post-procedure Foreign Bodies	109,395	14	0.01	0.01
46	Post-Operative Substance Reaction & Non-O.R. Procedure for Foreign Body	382,675	1	0.00	0.00
47	Encephalopathy	351,492	758	0.22	0.11
48	Other Complications of Medical Care	382,675	880	0.23	0.06
49	Iatrogenic Pneumothrax	360,239	196	0.05	0.05
50	Mechanical Complication of Device, Implant & Graft	373,288	333	0.09	0.07
51	Gastrointestinal Ostomy Complications	377,501	191	0.05	0.03
52	Inflammation & Other Complications of Devices, Implants or Grafts Except Vascular Infection	373,288	713	0.19	0.17
53	Infection, Inflammation and Clotting complications of Peripheral Vascular Catheters and Infusions	380,020	465	0.12	0.17
54	Infections due to Central Venous Catheters	401,253	153	0.04	0.02
55	Obstetrical Hemorrhage without Transfusion	45,537	2,611	5.73	2.45
56	Obstetrical Hemorrhage wtih Transfusion	45,537	255	0.56	0.30
57	Obstetric Lacerations & Other Trauma Without Instrumentation	46,253	1,153	2.49	2.24
58	Obstetric Lacerations & Other Trauma With Instrumentation	46,253	449	0.97	0.91
59	Medical & Anesthesia Obstetric Complications	46,253	502	1.09	0.65
60	Major Puerperal Infection and Other Major Obstetric Complications	46,253	210	0.45	0.47
61	Other Complications of Obstetrical Surgical & Perineal Wounds	46,253	161	0.35	0.32
62	Delivery with Placental Complications	46,253	193	0.42	0.41
63	Post-Operative Respiratory Failure with Tracheostomy	96,975	65	0.07	0.05
64	Other In-Hospital Adverse Events	382,675	481	0.13	0.00

Maryland July 07 – Mar 08

PPC 33-64

Maryland Hospitals with Higher and Lower Than Expected PPC Rate

Category	Number of Hospitals with Higher Than Expected PPC Rate	Number of Hospitals with Lower Than Expected PPC Rate	Number of Hospitals with As Expected PPC Rate	Statewide PPC Rate	Best Practice PPC Rate
Overall	15 (35.7%)	19 (45.2%)	8 (19.0%)	4.77	3.57
Medical	13 (31.0%)	20 (47.6%)	9 (21.4%)	3.56	2.59
Surgical	13 (31.0%)	11 (26.2%)	18 (42.9%)	8.46	7.05
Obstetrical	5 (11.9%)	7 (16.7%)	30 (71.4%)	4.23	3.41

Note: PPC rate based on having one or more of the 35 select “Major” PPCs

Maryland Hospitals Expected PPC Rates

PPC	PPC description	PPC Total Cases	Number of Hospitals with Higher Than Expected PPC Rate	Number of Hospitals with Lower Than Expected PPC Rate
22	URINARY TRACT INFECTION	4,921	8	13
24	RENAL FAILURE WITHOUT DIALYSIS	3,490	10	13
3	ACUTE PULMONARY EDEMA AND RESPIRATORY FAILURE WITHOUT MECHANICAL VENTILATION	2,861	13	13
55	OBSTETRICAL HEMORRHAGE WITHOUT TRANSFUSION	2,611	9	13
35	SEPTICEMIA & SEVERE INFECTIONS	2,415	8	17
40	POST-OP HEMORRHAGE & HEMATOMA WITHOUT HEM CNTRL OR I&D PROC	2,170	7	9
5	PNEUMONIA & OTHER LUNG INFECTIONS	2,112	8	9
10	CONGESTIVE HEART FAILURE	1,494	12	13
11	ACUTE MYOCARDIAL INFARCT	1,192	6	6
42	ACCIDENTAL PUNCTURE/LACERATION DURING INVASIVE PROCEDURE	1,162	6	4
4	ACUTE PULMONARY EDEMA AND RESPIRATORY FAILURE WITH MECHANICAL VENTILATION	1,160	5	6
57	OBSTETRIC LACERATIONS & OTHER TRAUMA WITHOUT INSTRUMENTATION	1,153	3	4
8	OTHER PULMONARY COMPLICATIONS	1,114	5	4
9	SHOCK	1,110	6	4
16	VENOUS THROMBOSIS	982	5	6
14	VENTRICULAR FIBRILLATION/CARDIAC ARREST	953	7	6
48	OTHER COMPLICATIONS OF MEDICAL CARE	880	8	10
33	CELLULITIS	782	8	4
47	ENCEPHALOPATHY	758	8	9
52	INFLAMMATION & OTHER COMP. OF DEVICES, IMPLANTS OR GRAFTS EXCEPT VASCULAR INFECTION	713	6	5
27	POST-HEMORRH & OTHER ACUTE ANEMIA WITH TRANSFUSION	679	7	4
31	DECUBITUS ULCER	634	6	6
17	MAJOR GASTROINTESTINAL COMPLICATIONS WITHOUT TRANSFUSION OR SIGNIFICANT BLEEDING	544	6	4
59	MEDICAL & ANESTHESIA OB COMPL	502	5	3
64	OTHER IN-HOSPITAL ADVERSE EVENTS	481	7	5
53	INFECTION, INFLAMMATION AND CLOTTING COMP. OF PERIPHERAL VASCULAR CATHETERS AND INFUS	465	7	3
13	OTHER CARDIAC COMPLICATIONS	453	5	5
58	OBSTETRIC LACERATIONS & OTHER TRAUMA WITH INSTRUMENTATION	449	5	3

Range of PPC Rates Across Maryland Hospitals

Category	Statewide PPC Rate	Lowest Hospital PPC Rate Hosp Act to Exp * State PPC Rate	Highest Hospital PPC Rate Hosp Act to Exp * State PPC Rate
Overall	4.77	1.86	10.17
Medical	3.56	1.11	9.51
Surgical	8.46	4.56	16.05
Obstetrical	4.23	1.55	9.27

Note: PPC rate based on having one or more of the 35 select “Major” PPCs

Potentially Preventable Readmissions (PPRs)

Return hospitalizations that may result from deficiencies in the process of care and treatment (readmission for a surgical wound infection) or lack of post discharge follow-up (prescription not filled) rather than unrelated events that occur post discharge (broken leg due to trauma).

Maryland Data PPR Analysis

- 27 months of data : Jan 2006 – March 2008
- Total admissions : 1,078,667
  - 2006 : 751,300
  - 2007 : 758,695
  - 2008 : 194,382
- 320 (0.02%) admissions excluded due to invalid or missing date of birth
- 50 hospitals

Unique Patient ID

- Probabilistic matching was performed to assign each admission a unique patient ID.
- Patient date of birth, gender, zip code, and hospital medical record ID were used to assign the final unique patient ID
  - Step 1: Uniquely ID each patient based on DOB + Gender + Zip code
  - Step 2: Patients with the same Unique ID from step 1 that have more than one Medical Record ID from the same hospital, are reassigned a unique ID by the Unique ID from Step 1 + hospital ID+ Medical Record Number.
  - Step 3: If more than one Unique ID from step 2 have the same Medical Record ID from the same hospital, then these patients are reassigned a unique ID based on the Unique ID in Step 2 + Hospital ID + Medical Record Number.

Linked Patient ID Data for PPR Assignment

- 1,078,667 patients identified.
- The number of admissions per patient in MD is 1.58.
- In Florida and in another all payer state where the patient ID was based on the SSN, the ratio was 1.75, and in another all payer state where the patient ID was based on a set of encrypted data elements, the ratio was 1.36.
- Patients with inconsistent or overlapping admissions based on admit and discharge dates were excluded from the PPR analysis.
  - 34,561 (2.03%) admissions rejected from the PPR logic.
- Patients classified as a global exclusion were not included in the PPR analysis. This includes major or metastatic malignancy, trauma and burn, neonatal, obstetrical, other specific APR-DRGs, and admissions with discharge status of LAMA. Patients that are transferred or have died are not at risk for starting a chain of readmissions.
  - 517,973 (30.4%) of the admissions are excluded or died and therefore, not a candidate admission for starting a chain of PPRs or classified as a PPR.

Maryland Rates of PPRs

		PPR Rate
15 Day Readmission Time Interval Across Hospital Readmissions	2006	6.74
	2007	6.74
30 Day Readmission Time Interval Across Hospital Readmissions	2006	9.89
	2007	9.81

- PPR rates consistent between two years

- 45% increase in PPR rate between a 15 day and 30 day readmission time interval

Maryland PPR Impact in 2007 for a 15 Day Readmission Time Interval

- 472,380 admissions were candidates for having a subsequent potentially preventable readmission
- 31,873 admissions were followed by one or more PPRs
- PPR rate is the percent of candidate admissions that were followed by one or more PPRs
  - PPR Rate 6.75 = 31,873 / 472,380

- 38,840 admissions were indentified as PPRs
- PPRs account for $430.4 million in charges and 199,582 hospital bed days

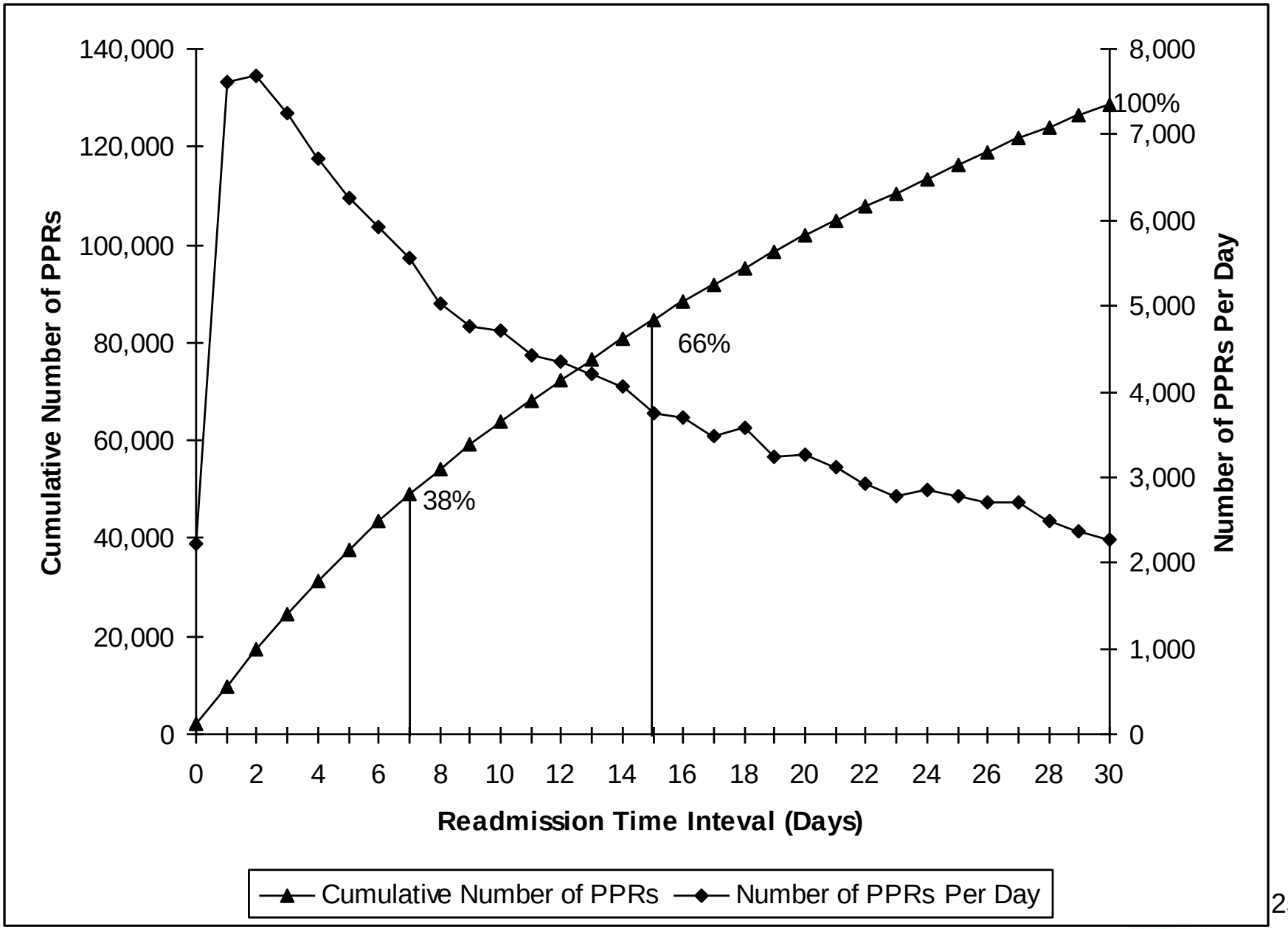
Maryland PPR Impact in 2007 for a 30 Day Readmission Time Interval

- 452,863 admissions were candidates for having a subsequent potentially preventable readmission
- 44,417 admissions were followed by one or more PPRs
- PPR rate is the percent of candidate admissions that were followed by one or more PPRs
  - PPR Rate 9.81 = 44,417 / 452,863

- 59,599 admissions were indentified as PPRs
- PPRs account for $656.9 million in charges and 303,865 hospital bed days

Length of Stay and Charges for Initial Admissions Followed by a PPR within a 30 Day Readmission Time Interval - 2007

	Number of Admissions	CMI	Average Length of Stay	Average Charge	
At Risk Not Followed by PPRs (Other Admission)	408,446	1.0481	3.75	$10,834	
			3.58	$10,337	CMI Adjusted
At Risk Followed by PPRs (Initial Admission)	44,417	1.3133	5.47	$14,930	
			4.16	$11,368	CMI Adjusted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0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
Cumulative Number of PPRs
Number of PPRs Per Day
Readmission Time Inteval (Days)
Cumulative Number of PPRs
Number of PPRs Per Day

Top 15 Initial Admissions followed by one or more PPR - 2007

APR DRG		Initial Admissions Followed by PPRs	Percent of Initial Admissions	PPR Rate	Initial Admissions Followed by PPRs	Percent of Initial Admissions	PPR Rate
		15 Day Window			30 Day Window		
194	HEART FAILURE	1,838	5.77%	12.03%	2,567	5.78%	18.80%
140	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	1,178	3.70%	10.02%	1,693	3.81%	15.67%
720	SEPTICEMIA & DISSEMINATED INFECTIONS	1,024	3.21%	10.14%	1,321	2.97%	14.31%
139	OTHER PNEUMONIA	765	2.40%	6.55%	1,078	2.43%	9.61%
175	PERCUTANEOUS CARDIOVASCULAR PROCEDURES W/O AMI	737	2.31%	8.02%	1,063	2.39%	11.81%
753	BIPOLAR DISORDERS	634	1.99%	7.53%	918	2.07%	11.56%
460	RENAL FAILURE	683	2.14%	9.85%	896	2.02%	14.01%
463	KIDNEY & URINARY TRACT INFECTIONS	606	1.90%	7.60%	836	1.88%	11.11%
201	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS	604	1.90%	6.93%	830	1.87%	9.95%
173	OTHER VASCULAR PROCEDURES	489	1.53%	10.38%	752	1.69%	16.61%
198	ANGINA PECTORIS & CORONARY ATHEROSCLEROSIS	542	1.70%	5.93%	752	1.69%	8.68%
751	MAJOR DEPRESSIVE DISORDERS & OTHER/UNSPECIFIED PSYCHOSES	512	1.61%	6.87%	732	1.65%	10.29%
383	CELLULITIS & OTHER BACTERIAL SKIN INFECTIONS	505	1.58%	4.73%	724	1.63%	7.01%
221	MAJOR SMALL & LARGE BOWEL PROCEDURES	529	1.66%	10.36%	718	1.62%	14.14%
750	SCHIZOPHRENIA	506	1.59%	9.16%	709	1.60%	13.85%

Top 15 represents 35% of all initial admissions followed by PPRs

Top 15 Reasons for PPRs - 2007

APR DRG		Number of Admissions Identified as a PPR	Total Charges for PPRs	Number of Admissions Identified as a PPR	Total Charges for PPRs
		15 Day Window		30 Day Window	
720	SEPTICEMIA & DISSEMINATED INFECTIONS	1,945	$36,578,709	3,041	$57,464,024
194	HEART FAILURE	2,929	$28,621,634	4,712	$45,489,197
140	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	1,338	$11,695,437	2,317	$19,740,461
130	RESPIRATORY SYSTEM DIAG W VENTILATOR SUPPORT 96+ HOURS	247	$13,131,776	352	$19,531,963
460	RENAL FAILURE	993	$10,852,746	1,568	$17,288,207
133	PULMONARY EDEMA & RESPIRATORY FAILURE	755	$11,477,824	1,145	$17,236,788
721	POST-OPERATIVE, POST-TRAUMATIC, OTHER DEVICE INFECTIONS	904	$9,858,735	1,241	$13,552,588
139	OTHER PNEUMONIA	878	$8,208,719	1,376	$12,538,408
711	POST-OP, POST-TRAUMA, OTHER DEVICE INFECTIONS W O.R. PROC	298	$8,652,870	441	$11,882,757
137	MAJOR RESPIRATORY INFECTIONS & INFLAMMATIONS	599	$7,545,054	855	$11,476,928
753	BIPOLAR DISORDERS	883	$7,083,904	1,365	$10,923,940
750	SCHIZOPHRENIA	678	$6,867,837	1,085	$10,247,781
45	CVA & PRECEREBRAL OCCLUSION W INFARCT	550	$6,946,806	796	$9,976,474
248	MAJOR GASTROINTESTINAL & PERITONEAL INFECTIONS	562	$5,873,658	890	$9,544,644
890	HIV W MULTIPLE MAJOR HIV RELATED CONDITIONS	231	$6,893,043	335	$9,451,503

Top 15 PPRs represents 42% of charges on PPRs for a 30 day readmission time window

Top Five PPR Reasons for an Initial Admission of Heart Failure - 2007

APR DRG		Number of Admissions Identified as a PPR	Total Charges for PPRs	Number of Admissions Identified as a PPR	Total Charges for PPRs
		15 Day Window		30 Day Window	
194	HEART FAILURE	962	$9,109,280	1,557	$14,239,684
460	RENAL FAILURE	104	$1,335,969	150	$1,969,758
720	SEPTICEMIA & DISSEMINATED INFECTIONS	97	$1,627,948	135	$2,535,465
140	RESPIRATORY SYSTEM DIAG W VENTILATOR SUPPORT 96+ HOURS	84	$691,335	134	$1,164,383
133	PULMONARY EDEMA & RESPIRATORY FAILURE	80	$1,044,021	113	$1,523,105
	All Other PPRs	1,602	$14,813,081	2,623	$24,056,802
	Total PPRs for Initial Admission of Heart Failure	2,929	$28,621,634	4,712	$45,489,197

Maryland Hospital Rates of PPRs – 2007 with 15 day window

PPR Rate	No. Hospitals
< 4	3
4-5.9	8
6 - 6.9	20
7 - 7.9	14
8+	4

-Overall Statewide PPR rate of 6.74

-27 hospitals have lower actual to expected PPR rate

-22 hospitals have higher actual to expected PPR rate with a percent difference between actual and expected PPR rate ranging from 4.8% to 29.3%

-Top 16 best practice hospitals have a 13% lower actual to expected PPR rate (BP: hospitals with the lowest actual PPR rate – expected PPR rate representing 25% of case volume)

Age and Mental Health Adjustment: Ratio of Actual to Expected PPR Rate

Condition	0-17	18-84	Age >= 85
Major Mental Health Excluding MDC 19	0.6970	1.1210	1.2050
All Other	0.6860	0.9821	1.1160

Impact on Maryland Rate Setting

- Key is to put in place incentives that lead to the reduction of cost associated with PPCs and PPRs.
  - PPR (15 day) estimated associated charges in 2007: $430.4 million (5.3%)
  - PPR (30 day) estimated associated charges in 2007 : $656.9 million (8.0%)
  - PPC (selected PPCs) estimated associated charges in FY 2008: $116.9 to $193.4 million (1.4-2.3%)

- For PPRs (15 day), an estimated impact on CMI around 2 - 4%
- For PPCs, an estimated impact on CMI around 1 – 2%
- Total estimated impact on CMI around 3 – 6%